Department of Conservation
Strong Motion Instrumentation Program
801 K Street, MS 13-35
Sacramento, CA 95814

SMIP03 Seminar

on Utilization of Strong-Motion Data

May 22, 2003
Oakland, California

including

Field Trip to Oakland City Hall

CALIFORNIA STRONG MOTION INSTRUMENTATION PROGRAM

California Geological Survey

SMIP03 Seminar on Utilization of Strong-Motion Data

The purpose of this annual Seminar is to increase the utilization of strong-motion data in improving post-earthquake response, seismic code provisions and design practices. The Seminar is the fourteenth in a series of annual events designed to transfer recent research findings on strong-motion data to practicing seismic design professionals and earth scientists. The goal is to provide information that will be useful immediately in seismic design practice and post-earthquake response and, in the longer term, in the improvement of seismic design codes and standards.

In 1997, a joint project, TriNet, between the CSMIP, Caltech and USGS at Pasadena was funded by the Federal Emergency Management Agency through the California Office of Emergency Services. The goals of the project are to record and rapidly communicate ground shaking information in southern California, and to analyze the data for the improvement of seismic codes and standards.

TriNet produces a ShakeMap of ground shaking, based on shaking recorded by stations in the network, within minutes following an earthquake. The ShakeMap will identify areas of the greatest ground shaking for use by the Office of Emergency Services and other emergency response personnel in the event of a damaging earthquake. The ShakeMap can be viewed at the TriNet Web site http://www.trinet.org

In July 2001, the California Office of Emergency Services began to obtain funding for the California Integrated Seismic Network (CISN), a newly formed consortium of institutions (USGS, CGS, Caltech and UC Berkeley) engaged in statewide earthquake monitoring. The CISN will improve seismic instrumentation and provide statewide ground shaking intensity maps. It will also distribute and archive strong-motion records of engineering interest and seismological data for all recorded earthquakes, and provide training for users (http://www.cisn.org).

Strong Motion Instrumentation of Seismically Strengthened Oakland City Hall

The 19-story Oakland City Hall, built in 1914, is a National Historic Landmark. The City Hall was strengthened after the 1989 Loma Prieta Earthquake and instrumented with 21 sensors by CSMIP in 1995.

As illustrated by the skeleton model above, the structure was strengthened with new concrete shear walls, steel bracing (orange colored) at upper floors, and rubber seismic isolation bearings (yellow dots) at the base. The 21 sensors installed in the building are distributed from below the isolators to the tower.

PROGRAM

Thursday, May 22, 2003
Oakland Marriott City Center
1001 Broadway, Oakland

8:00 am REGISTRATION

9:00 am WELCOMING REMARKS
Chris Poland, Chair, Strong Motion Instrumentation Advisory Committee (SMIAC)
James Davis, State Geologist, California Geological Survey

9:10 am INTRODUCTORY REMARKS
Anthony Shakal and ***Moh Huang,*** Strong Motion Instrumentation Program

SESSION I

Moderator: ***Bruce Bolt***, UC Berkeley, SMIAC

9:20 am "Development of an Engineering Model of Basin Generated Surface Waves"
Paul Somerville, *Robert Graves*, and *Arben Pitarka,* URS Group, Inc.

9:45 am "Design Ground Motion Library: A Progress Report"
Maurice Power, Geomatrix Consultants

10:10 am Questions and Answers for Session I

10:20 am BREAK

CISN, the California Integrated Seismic Network, is a new consortium of CSMIP, Caltech, USGS at Pasadena, UC Berkeley and USGS at Menlo Park. It supercedes TriNet and is funded by the California Office of Emergency Services to improve seismic instrumentation and provide ground shaking intensity maps, statewide.

SESSION II

Moderator: ***Wilfred Iwan***, Caltech, SMIAC

10:40 am "Rapid Post-Earthquake Strong-Motion Data via the Internet Quick Report and the CISN Engineering Strong Motion Data Center"
Anthony Shakal, Kuo-Wan Lin and *Moh Huang*, CSMIP, and *Woody Savage* and *Chris Stephens*, USGS/NSMP

11:05 am "Guidelines for Utilizing Strong-Motion and ShakeMap Data in Post-Earthquake Response: Final Report" (***ATC-54***)
Christopher Rojahn, Applied Technology Council; *Craig Comartin*, Comartin-Reis; and *Stephanie King*, Hart-Weidlinger

11:30 am Questions and Answers for Session II

11:45 pm **LUNCH**

SESSION III

Moderator: ***Vern Persson***, SMIAC

12:45 pm "Nonuniform Ground Motion Effects at Pacoima Dam"
John Hall and *Steven Alves*, Caltech

1:10 pm "Seismic Analysis of the Interstate 5 and Highway 14 Connector Bridge"
Robert Dowell, Dowell-Holombo Engineering, Inc.

1:35 pm Questions and Answers for Session III

1:45 pm BREAK

SESSION IV

Moderator: ***Chris Poland***, Degenkolb Engineers, SMIAC

2:05 pm "Correlation of Observed Building Performance with Measured Ground Motion"
Stephanie King, Hart-Weidlinger; *Anne Kiremidjian*, *Pooya Sarabandi* and *Dimitris Pachakis*, Stanford University

2:30 pm "Evaluation of Nonlinear Static Procedures Using Strong Motion Building Records"
Rakesh Goel, California Polytechnic State University, San Luis Obispo

2:55 pm Field Trip Introduction "Seismic Strengthening of Oakland City Hall"
Mason Walters, Forell/Elsesser Engineers

3:15 pm Field Trip Introduction "Strong Motion Instrumentation of Oakland City Hall"
Moh Huang, *Anthony Shakal* and *Carl Petersen*, CSMIP

3:30 pm Field Trip to Oakland City Hall

The Internet Quick Report (IQR) has been developed under CISN by CGS/CSMIP and USGS/NSMP to rapidly distribute strong-motion data and related information via the World Wide Web: http://www.cisn-edc.org

If you have any questions on the Seminar, contact Shirley Rowley, CGS/SMIP at 916/322-3105.

SMIP03 Seminar Registration Form

Name _____

Organization _____

Address _____

_____

City, State, Zip _____

Phone _____ Fax _____

E-Mail _____

Registration fee (includes seminar proceedings and lunch)

___ $75 per person
___ $50 for government employees
___ $20 for students (age 35 and under)
___ add $10 if registration postmarked after May 15
___ I wish to attend the field trip to Oakland City Hall

Total Amount Enclosed: _____

Please make check payable to **Department of Conservation** and mail this registration form to:

SMIP03 Seminar
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Strong Motion Instrumentation Program
801 K Street, MS 13-35
Sacramento, CA 95814

If paying by credit card you can mail your registration form using the above address or fax to **(916) 323-7778**

VISA/MasterCard No. Expiration Date

Authorized Signature

For hotel reservations, call the Oakland Marriott City Center at 510/451-4000. Be sure to identify yourself as a SMIP03 Seminar attendee to receive the special room rate of $139 plus tax.